

# Building a Regional Transit Information System

**GIS-T 2001**

**The Next Generation  
Of Geo-spatial Information Systems  
Crystal City/Arlington, VA**

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Commission**

## Overview of Presentation

- Context – MTC & Bay Area Data Sources
- Problems – Unconnected Bits & Bytes
- Overview – Regional Transit Database (RTD)
- Details – Description of system components
- Customer Service Products – Data Transformed into Information

# Metropolitan Transportation Commission (MTC)

- San Francisco Bay Area MPO & RTPA
- Appointed Commissioners (19) – Partnerships
- RTP – Sustain & improve the regional transportation system
- 120 employees
- <http://www.mtc.ca.gov>



## Context – Bay Area Data Sources

- 7.0 mil. population
- 9 counties and 101 cities
- 7,179 square miles
- Transit agencies (25 +)
- 1,200 transit routes (353 mi. of rail transit)
- Approx. 30,000 transit stops
- 19,000 miles of local roads (1,400 hwy)

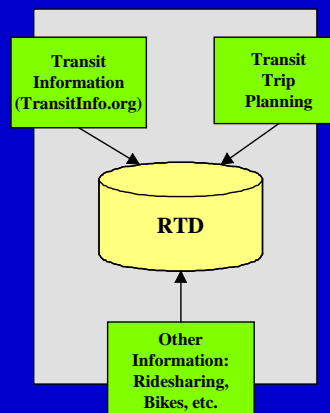


## RTIS Focuses on Problems – Unconnected Data

- Few regional transit data standards
  - Route, schedule, stop, fare formats
  - Basemap or street centerline files
  - Metadata, etc.
- Islands of data
- Data duplication
- Lack of procedures/protocols to share information
- Data maintenance is expensive

## RTIS Objectives – Dissemination and Maintenance

- Create information from data
- Improve access to information
- Improve data maintenance efficiency
- Upgrade the quality of data
- Share resources

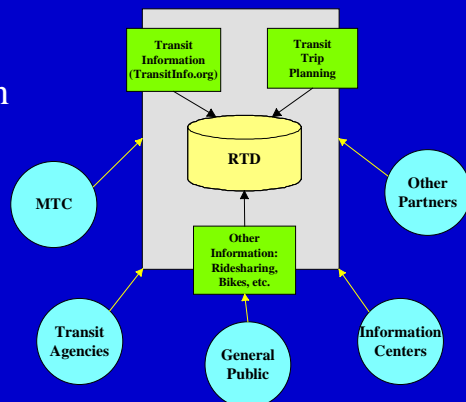


## What does the RTIS do?

- Integrates transit service data
- Centralizes access to regional information
- New and improved customer service products
- Provides data back to transit agencies
- Provides regional GIS services
- Improved mapping services to the public

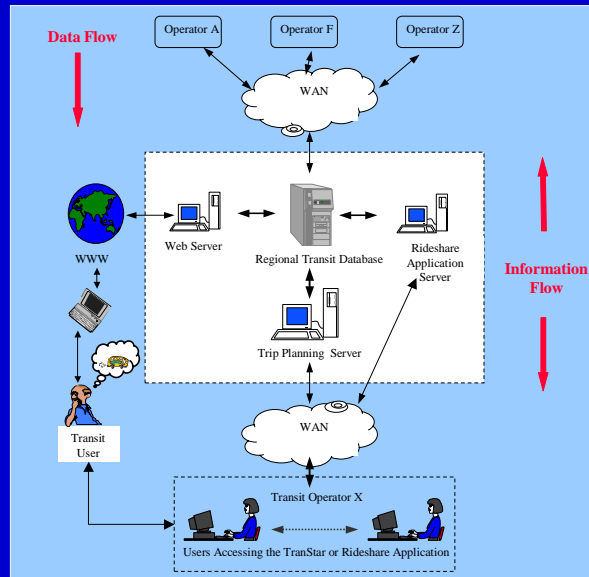
## Who uses the system?

- The general public
- Telephone information centers
- Transit agencies
- MTC
- Regional Transportation Partners

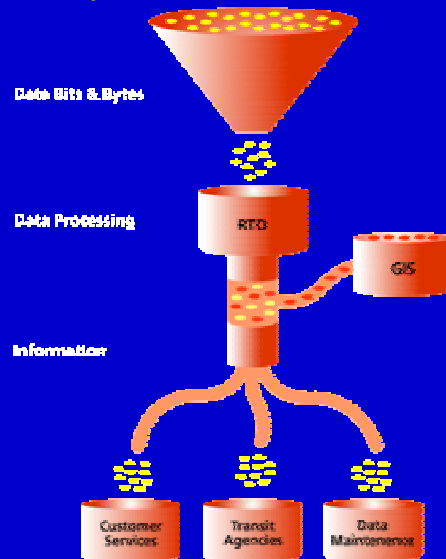


## Regional Transit Information System

- Regional Transit Database (RTD)
- Transit service applications
- Centralized GIS resources
- Frame-relay communications
- Web access

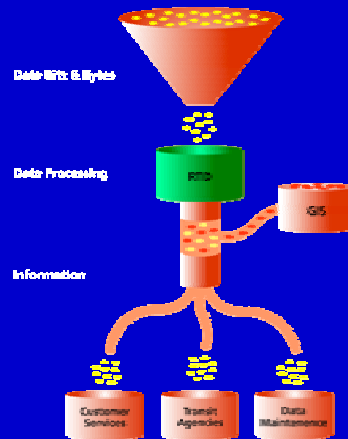


## Bits & Bytes to Information....



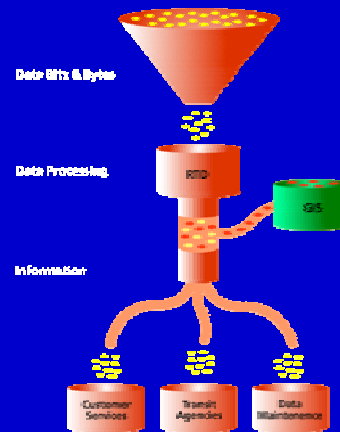
## Regional Transit Database (RTD)

- Relational Database Environment
- Open Data Structure (TCIP Compatible)
- Spatial (GIS) & Standard Data Types
- Data Validation & Normalization
- Analysis Tools
- Open Access



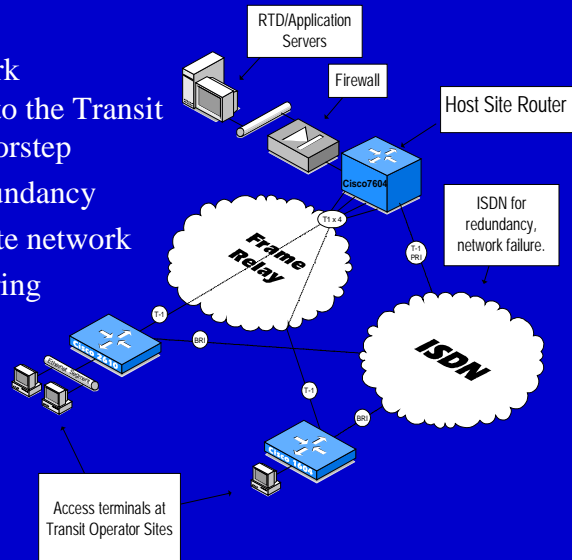
## Regional GIS Resources

- GIS Basemap – Bay Area Standard
- Spatially enable agency data (stops, routes, landmarks, service area)
- Spatial Database Server
- Internet Map Server
- Standardized tools (Geo-coding, Routing, Mapping, etc.)
- Object Library for Developers



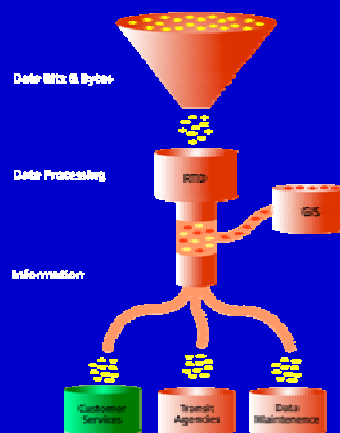
## Frame-Relay Communications

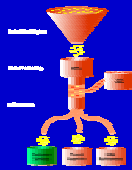
- Bring Network connectivity to the Transit Operators doorstep
- Network redundancy
- Secure, private network
- 24x7 monitoring



## Products – Data Transformed into Information

- Customer service products
- Transit agency products
- Data maintenance products

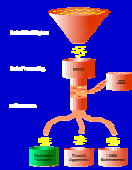
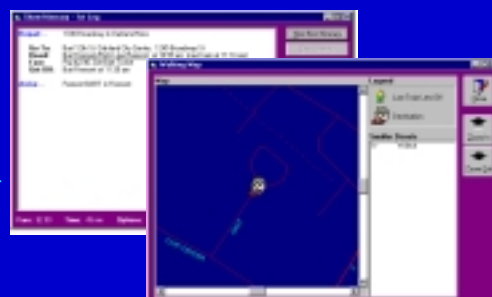




## Customer service products

- Regional transit trip planning
- Transit trip planning on the web
- Web information
- GIS functionality
- Other

- Interactive VB Interface for Customer Service Representatives
- Custom trip itinerary based on origin, destination and other preferences



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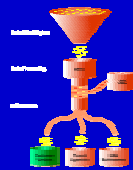


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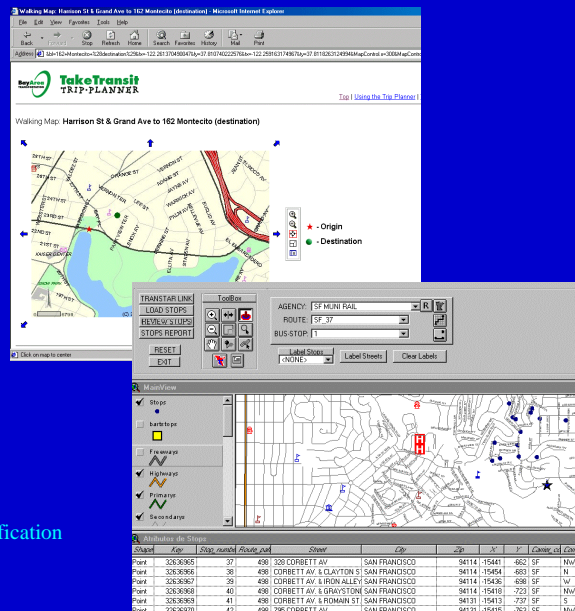


- 8 Primary (Large) Transit Operators, 45 Smaller Transit Agencies & Shuttle Services, 7 Ferry Service Providers
- Comprehensive Information (Contact, Route, Schedule, Fares, Route Maps, ADA, Bike Info)



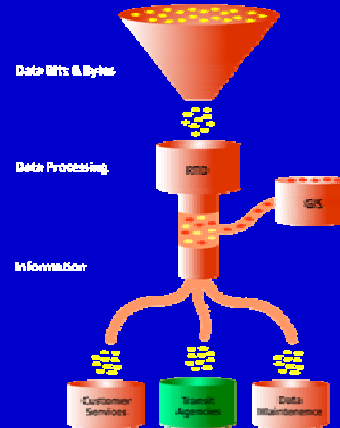
## Customer service products

- Regional transit trip planning
  - Transit trip planning on the web
  - Web information
  - **GIS functionality**
  - Other
- Transit Data Visualization, Verification and Quality Assurance



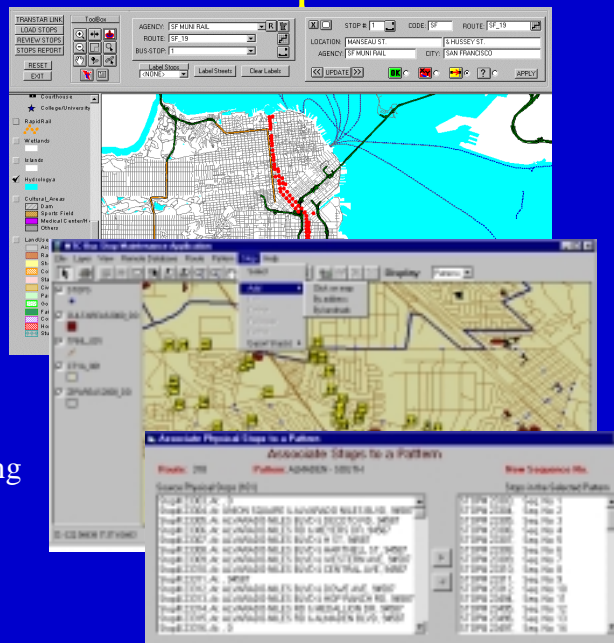
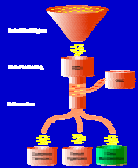
# Transit agency products

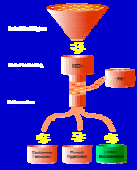
- Partnership
- Regional Cooperation – better coordination of transfers/schedules
- Regional standards
- Automated Data exchange – APIs into Agency Systems
- New and shared analytical capabilities



# Data maintenance products

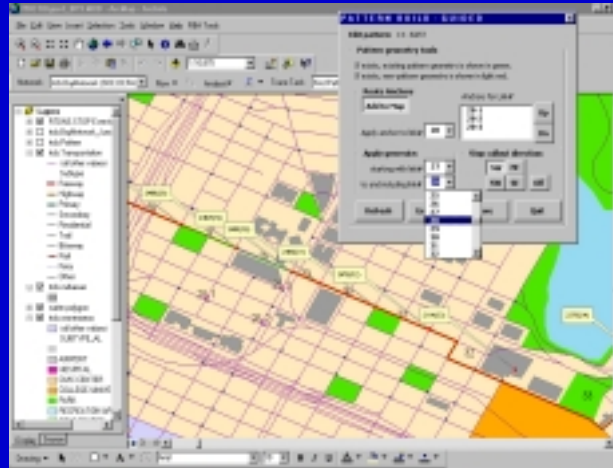
- Bus Stop quality assurance
- Transit Stop maintenance
- Route Builder and editor
- Data input screens
- Better Error Trapping
- Easier data maintenance





## Data Maintenance Applications (contd.)

- Transit Route Builder Application
- Automatically develops Route/Pattern shapes from the Route, Pattern and Stop data in RTD
- Routes shapes are utilized by TakeTransit, TranStar, Web Mapping on TransitInfo, and Analysis



## Regional Transit Information System - Benefits

- Shared resources
- Regional standards
- Minimal data duplication
- Centralized access
- Better information sharing
- Higher quality bits & bytes
- Improved Level of Service to customers



## Further Information...

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